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ART UNIT	PAPER NUMBER
2617	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/650,887	DONOVAN ET AL.	
	Examiner	Art Unit	
	Marivelisse Santiago-Cordero	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 July 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-92,94-104,106-115,117-155,157-167,169-178 and 180-258* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-92,94-104,106-115,117-155,157-167,169-178 and 180-258* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 August 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/26/06 has been entered.

2. Accordingly, claims 1-92, 94-104, 106-115, 117-155, 157-167, 169-178, and 180-258 are pending. Claims 93, 105, 116, 156, 168, and 179 were cancelled.

Terminal Disclaimer

3. The terminal disclaimer filed on 02/01/2006 disclaiming the terminal portion of any patent granted on this application, which would extend beyond the expiration date of any patent granted on Application Number 10/665,252 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Response to Arguments

4. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Drawings

5. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the first and second wireless circuit (See Claims 123-153, 186-216, 239-258) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing-sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

6. Claims 110, 119, 150, 162, 173, 182, 213, 223, 230, 236, and 256 are objected to for the same reasons stated above for claim 99. Appropriate correction is required.

Claims 253-258 are objected to because of the following informalities: the term "wireless Ethernet network device" in line 16 should be corrected to --wireless device-- in order to be consistent with claim terminology; see, e.g., the preamble where it states a wireless device. For purposes of examination, the term "wireless device" will be considered.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 123-153, 186-216, 239-258 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 123-153, 186-216, 239-258, it is not clear what elements a first and second wireless circuit encompasses. The drawings and specification does not clarify what the wireless circuits might be. Claim 130 states that the first wireless circuit is one of a baseband processor (BBP) an/or an RF transmitter; however, the drawings do not show these elements as wireless; nor the specification classifies them as such. Appropriate correction is required.

Examiner's Remarks

9. For purposes of organization, the claims are structured in the following matter:

Group I: Claims 1-25, 31-55, and 61-85

Group II: Claims 26-30, 56-60, and 86-90

Group III: Claims 91-92, 94-102, 154-155, 157-165, and 217-225

Group IV: Claims 103-104, 106-113, 166-167, 169-176, and 226-232

Group V: Claims 114-115, 117-122, 177-178, 180-185, and 233-238

Group VI: Claims 123-133, 186-196, and 239-245

Group VII: Claims 134-144, 197-207, and 246-252

Group VIII: Claims 145-153, 208-216, and 253-258

Claim Rejections - 35 USC § 103

GROUP I:

10. Claims 1-4, 6, 8-9, 13-16, 18-22, 24-25, 31-35, 36, 38-39, 43-46, 48-52, 54-55, 61-64, 66, 68-69, 73-82, 74-76, 78-85 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jokinen (Patent No.: 5,774,813) in views of Karaoguz (Pub. No.: US 2004/0029620) and Aoyama.

Regarding claim 1, Jokinen discloses a wireless network device (col. 1, lines 13-17; col. 4, lines 40-45) with active and low power modes (col. 3, lines 54-63), comprising:

a first voltage regulator that regulates supply voltage during the active mode and that is powered down during the low power mode (col. 4, lines 30-40);

a second voltage regulator (col. 4, lines 30-40), and that regulates supply voltage during the low power mode (col. 4, lines 30-40); and

a controller device that selects said first voltage regulator during the active mode and said second voltage regulator during the low power mode (col. 5, lines 17-23; col. 6, lines 12-17), wherein the wireless network device at least one of transmits and receives data during the active mode (col. 1, line 66 through col. 2, line 15).

Jokinen fails to specifically disclose Ethernet; the second voltage regulator dissipating less power than said first voltage regulator; and the controller being a medium access controller (MAC). However, note that wireless network device may be mobile telephones or portable computers, notoriously well known in the art, at the time of invention by applicant, for their configuration in wireless Ethernet networks and that MAC devices are representative of Ethernet network devices.

Nevertheless, in the same field of endeavor, Karaoguz discloses a wireless Ethernet network device with active and low power modes (Fig. 1; Abstract), comprising a medium access controller (MAC) device (Fig. 6; paragraph [0054]).

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by applicant to modify Jokinen's device to operate in a wireless Ethernet network and modifying the controlling device to be a MAC as suggested by Karaoguz for the advantages that Ethernet is widely available, cost-effective, and is the best engineering design choice; in addition, that the MAC complies with wireless network devices, specifically Ethernet.

In addition, in the same field of endeavor, Aoyama discloses a device with active and low power modes, comprising a second voltage regulator that dissipates less power than said first voltage regulator (Fig. 3, reference 1; col. 3, lines 6-10; col. 7, line 66 through col. 8, line 2).

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by applicant to modify Jokinen's second voltage regulator to dissipate less power than said first voltage regulator as suggested by Aoyama for the advantages of enabling respective units and circuits to maintain their operations while reducing power consumption (Aoyama: col. 3, lines 20-31)

Regarding claims 31 and 61, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 1.

Regarding claim 2, in the obvious combination, Karaoguz discloses further comprising a baseband processor (BBP) that performs radio frequency mixing (Fig. 6, reference 158) and that communicates with said MAC device (Fig. 6).

Regarding claims 32 and 62, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 2.

Regarding claim 3, Jokinen in combination with Karaoguz and Aoyama disclose the device of claim 2; but fail to specifically disclose wherein at least one of said first and second voltage regulators is located in said BBP. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to locate at least one of said first and second voltage regulators of Jokinen in combination with Karaoguz and Aoyama in said BBP, since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art. *Howard v. Detroit Stove Works*, 150 U.S. 164 (1893), in addition, to make it integral, place in a single housing.

Regarding claims 33 and 63, the limitations are rejected for the same reasons and motivations stated above for claim 3.

Regarding claim 4, in the obvious combination, Karaoguz discloses further comprising a first phase locked loop (PLL) that generates a first clock signal for said BBP during the active mode (Fig. 6; paragraph [0037]; note that PLL inherently generates clock signals).

Regarding claims 34 and 64, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 4.

Regarding claim 6, in the obvious combination, Karaoguz discloses further comprising a crystal oscillator that outputs a timing signal to said first PLL during the active mode (Fig. 6; paragraphs [0037] and [0043]; note that a crystal oscillator inherently outputs a timing signal).

Regarding claims 36 and 66, the limitations are rejected for the same reasons and motivations stated above for claim 6.

Regarding claim 8, in the obvious combination, Aoyama discloses further comprising a first oscillator that generates a third clock signal during the low power mode, wherein said first oscillator dissipates less power than said crystal oscillator (Aoyama: Fig. 3, reference 4)

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by applicant to incorporate a first oscillator that generates a third clock signal during the low power mode wherein said first oscillator dissipates less power than said crystal oscillator as suggested by Aoyama for the advantages of minimize power consumption by operating the controller at the lowest clock speed necessary and by turning off the high frequency oscillator when not in use.

Regarding claims 38 and 68, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 8.

Regarding claim 9, in the obvious combination, Jokinen discloses wherein when said MAC device (note the modification of claim 1) initiates the low power mode, said first voltage regulator is shut down (col. 4, lines 30-40).

Regarding claims 39 and 69, the limitations are rejected for the same reasons and motivations stated above for claim 3.

Regarding claim 13, in the obvious combination, Jokinen discloses wherein said MAC device includes a counter and wherein when said MAC device initiates the low power mode, said second voltage regulator powers said counter (col. 4, lines 57-61; col. 5, lies 17-23; note that the period on time inherently requires a counter). In addition, Aoyama discloses said second voltage regulator powers said first oscillator (Figs. 3 and 9).

Regarding claims 43 and 73, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 13.

Regarding claim 14, in the obvious combination, Jokinen discloses wherein when said counter reaches a predetermined count, said MAC device powers up at least said first voltage regulator (col. 8, lines 22-49). In addition, Karaoguz discloses powering up at least two of said crystal oscillator, said first voltage regulator, said RF transceiver, said first PLL and said second PLL (paragraph [0043]).

Regarding claims 44 and 74, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 14.

Regarding claim 15, in the obvious combination, Karaoguz discloses wherein said wireless Ethernet network device is operated in an infrastructure mode (paragraph [0051]).

Regarding claims 45 and 75, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 15.

Regarding claim 16, in the obvious combination, Karaoguz discloses wherein said wireless Ethernet network device is operated in an ad hoc mode (paragraph [0051]).

Regarding claims 46 and 76, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 16.

Regarding claim 18, a wireless network device with active and low power modes, comprising:

a first voltage regulator that regulates supply voltage during the active mode and that is powered down during the low power mode (col. 4, lines 30-40);

a second voltage regulator that regulates supply voltage during the low power mode (col. 4, lines 30-40);

a controller device that selects said first voltage regulator during the active mode and said second voltage regulator during the low power mode (col. 5, lines 17-23; col. 6, lines 12-17).

Jokinen fails to specifically disclose Ethernet; the second voltage regulator dissipating less power than said first voltage regulator; the controller being a medium access controller (MAC); a baseband processor (BBP) that performs radio frequency mixing and that communicates with said MAC device; and a first phase locked loop (PLL) that generates a first clock signal for said BBP during the active mode; and a crystal oscillator that outputs a timing signal to said first PLL during the active mode, wherein said MAC device powers down said first PLL before shutting down said first voltage regulator and said crystal oscillator.

However, note that wireless network device may be mobile telephones or portable computers, notoriously well known in the art, at the time of invention by applicant, for their configuration in wireless Ethernet networks and that MAC devices, baseband processor (BBP) that performs radio frequency mixing and that communicates with said MAC device and a first phase locked loop (PLL) that generates a first clock signal for said BBP and a crystal oscillator that outputs a timing signal to said first PLL are all representative of Ethernet network devices.

Nevertheless, in the same field of endeavor, Karaoguz discloses a wireless Ethernet network device with active and low power modes (Fig. 1; Abstract), comprising a medium access controller (MAC) device (Fig. 6; paragraph [0054]); a baseband processor (BBP) that performs radio frequency mixing and that communicates with said MAC device (Fig. 6); and a first phase locked loop (PLL) that generates a first clock signal for said BBP during the active

mode (Fig. 6); and a crystal oscillator that outputs a timing signal to said first PLL during the active mode (Fig. 6), wherein said MAC device powers down said first PLL before shutting down said first voltage regulator and said crystal oscillator (paragraphs [0043] and [0054].

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by applicant to modify Jokinen's device to operate in a wireless Ethernet network and a medium access controller (MAC); a baseband processor (BBP) that performs radio frequency mixing and that communicates with said MAC device; and a first phase locked loop (PLL) that generates a first clock signal for said BBP during the active mode; and a crystal oscillator that outputs a timing signal to said first PLL during the active mode, wherein said MAC device powers down said first PLL before shutting down said first voltage regulator and said crystal oscillator for the advantages that Ethernet is widely available, cost-effective, and is the best engineering design choice; in addition, that the MAC, BBP, PLL, and oscillator comply with wireless network devices, specifically Ethernet and for the advantages of extending the battery life to a maximum amount (Karaoguz: paragraph [0009]).

In addition, in the same field of endeavor, Aoyama discloses a device with active and low power modes, comprising a second voltage regulator that dissipates less power than said first voltage regulator (Fig. 3, reference 1; col. 3, lines 6-10; col. 7, line 66 through col. 8, line 2).

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by applicant to modify Jokinen's second voltage regulator to dissipate less power than said first voltage regulator as suggested by Aoyama for the advantages of enabling respective units and circuits to maintain their operations while reducing power consumption (Aoyama: col. 3, lines 20-31)

Regarding claims 48 and 78, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 18.

Regarding claim 19, in the obvious combination, Karaoguz discloses wherein said crystal oscillator is an external crystal oscillator (XOSC) (Fig. 6).

Regarding claims 49 and 79, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 19.

Regarding claim 20, in the obvious combination, Karaoguz discloses wherein said crystal oscillator includes an external crystal and an amplifier (Fig. 6; col. 4, paragraph [0037]). Karaoguz fails to disclose that is integrated with one of said MAC device, said BBP, and said RF transceiver. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to integrate said crystal oscillator with one of said MAC device, said BBP, and said RF transceiver, since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art. *Howard v. Detroit Stove Works*, 150 U.S. 164 (1893), in addition, to making integral and placing in a single housing.

Regarding claims 50 and 80, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 20.

Regarding claim 21, in the obvious combination, Karaoguz discloses wherein said MAC device includes transmit and receive state machines (Fig. 7) and a transmit buffer (Fig. 7) and further comprising initiating said low power mode when said transmit buffer is empty and said transmit and receive state machines are idle (paragraphs [0047] and [0051]).

Regarding claims 51 and 81, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 21.

Regarding claim 22, Jokinen in combination with Karaoguz and Aoyama disclose the claimed invention except for wherein said wireless Ethernet network device dissipates less than 2mW when in said low power mode. However, it would have been obvious to one of ordinary skill in this art at the time the invention was made to dissipate less than 2mW when in said low power mode, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claims 52 and 82, the limitations are rejected for the same reasons and motivations stated above for claim 22.

Regarding claim 24, in the obvious combination, Jokinen in combination with Karaoguz and Aoyama fail to disclose wherein said first oscillator is located in said BBP. However, it would have been obvious to one of ordinary skill in this art at the time the invention was made to locate said first oscillator in said BBP, since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together involves only routine skill in the art. *Howard v. Detroit Stove Works*, 150 U.S. 164 (1893), in addition, to making integral and placing in a single housing.

Regarding claims 54 and 84, the limitations are rejected for the same reasons and motivations stated above for claim 24.

Regarding claim 25, in the obvious combination, Karaoguz discloses wherein at least two of said BBP, said first voltage regulator, said second voltage regulator, said RF transceiver, said MAC device, and said first PLL are implemented by a system on chip (SOC) (paragraph [0036]).

11. Claims 5, 7, 10-12, 17, 35, 37, 40-42, 47, 65, 67, 70-72, 77 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jokinen in combination with Karaoguz and Aoyama and further in view of Applicant's admitted prior art.

Regarding claim 5, Jokinen in combination with Karaoguz and Aoyama fail to specifically disclose wherein said first PLL is located in said BBP.

However, Applicant's admitted prior art discloses wherein said first PLL is located in said BBP (Background of the Invention: paragraph [0003]).

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by applicant to locate said first PLL of Jokinen in combination with Karaoguz and Aoyama in said BBP as suggested by Applicant's admitted prior art for the advantages of making integral and placing in a single housing.

Regarding claims 35 and 65, the limitations are rejected for the same reasons and motivations stated above for claim 5.

Regarding claim 7, in the obvious combination, Karaoguz discloses further comprising a radio frequency (RF) transceiver that transmits and receives wireless signals, that communicates with said BBP (Fig. 6).

Jokinen in combination with Karaoguz and Aoyama fail to disclose that includes a second PLL that receives said timing signal from said crystal oscillator during the active mode and that generates a second clock signal for said RF transceiver.

However, Applicant's admitted prior art discloses an RF transceiver that includes a second PLL (Background of the Invention: paragraphs [0002]-[0003]; note the plurality of phase locked loops) that receives said timing signal from said crystal oscillator during the active mode and that generates a second clock signal for said RF transceiver (Background of the Invention: paragraph [0003]; the RF transceiver may include PLL which inherently generates clock signals).

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by applicant to include in the RF transceiver of Jokinen in combination with Karaoguz and Aoyama a second PLL that receives said timing signal from said crystal oscillator during the active mode and that generates a second clock signal for said RF transceiver as suggested by Applicant's admitted prior art because they adjust the frequency of the input signal.

Regarding claims 37 and 67, the limitations are rejected for the same reasons and motivations stated above for claim 7.

Regarding claim 10, in the obvious combination, Karaoguz discloses wherein when said MAC device (note the modification of claim 1) initiates the low power mode, said RF transceiver is shut down (paragraph [0043]).

Regarding claims 40 and 70, the limitations are rejected for the same reasons and motivations stated above for claim 10.

Regarding claim 11, in the obvious combination, Karaoguz discloses wherein when said MAC device initiates the low power mode, said first and second PLL are shut down (paragraph [0043]; see modification of claim 7).

Regarding claims 41 and 71, the limitations are rejected for the same reasons and motivations stated above for claim 11.

Regarding claim 12, in the obvious combination, Karaoguz discloses wherein when said MAC device initiates the low power mode, said crystal oscillator is shut down (paragraph [0043]; see modification of claim 7).

Regarding claims 42 and 72, the limitations are rejected for the same reasons and motivations stated above for claim 12.

Regarding claim 17, in the obvious combination, Karaoguz discloses wherein said MAC device includes an external interface (Fig. 2) and wherein when said MAC device receives a wake up signal from a host via said external interface (Fig. 2), said MAC device powers up at least two of said crystal oscillator, said first voltage regulator, said RF transceiver and said first and second PLL (paragraph [0053].

Regarding claims 47 and 77, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 17.

12. Claims 23, 53, and 83 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jokinen in combination with Karaoguz and Aoyama and further in view of Chapman.

Regarding claim 23, Jokinen in combination with Karaoguz and Aoyama disclose the device of claim 6, further comprising a processor that communicates with said crystal oscillator (Karaoguz: Fig. 6), but fail to disclose further comprising that calibrates said first oscillator using said timing signal from said crystal oscillator.

However, in the same field of endeavor, Chapman discloses a processor that calibrates said first oscillator using said timing signal from said crystal oscillator (from col. 2, line 65 through col. 3, line 5).

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by applicant to calibrate said first oscillator using said timing signal from said crystal oscillator Jokinen in combination with Karaoguz and Aoyama as suggested by Chapman because it would compensate for the inaccuracy of the oscillator due to its dependence upon voltage, process and temperature and it's inherent frequency instability (Chapman: from col. 2, line 65 through col. 3, line 5).

Regarding claims 53 and 83, the limitations are rejected for the same reasons and motivations stated above for claim 23.

GROUP II:

13. Claims 26-30, 56-60, and 86-90 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jokinen in views of Karaoguz and Aoyama.

Regarding claim 26, Jokinen discloses a processor for a wireless network device (col. 1, lines 13-17; col. 4, lines 40-45) with active and low power modes (col. 3, lines 54-63), comprising:

a first voltage regulator that regulates supply voltage during the active mode and that is powered down during the low power mode (col. 4, lines 30-40); and

a second voltage regulator (col. 4, lines 30-40), and that regulates supply voltage during the low power mode (col. 4, lines 30-40); wherein the wireless network device at least one of transmits and receives data during the active mode (col. 1, line 66 through col. 2, line 15).

Jokinen fails to specifically disclose a baseband processor, Ethernet; and the second voltage regulator dissipating less power than said first voltage regulator. However, note that wireless network device may be mobile telephones or portable computers, notoriously well known in the art, at the time of invention by applicant, for their configuration in wireless Ethernet networks and that baseband processors devices are representative of this devices, specifically, Ethernet network devices.

Nevertheless, in the same field of endeavor, Karaoguz discloses a baseband processor for a wireless Ethernet network device with active and low power modes (Figs. 1 and 6; Abstract).

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by applicant to modify the processor of Jokinen to be a baseband processor for a wireless Ethernet network as suggested by Karaoguz for the advantages that Ethernet is widely available, cost-effective, and is the best engineering design choice; in addition, that the baseband processor complies with wireless network devices and are widely available.

In addition, in the same field of endeavor, Aoyama discloses a device with active and low power modes, comprising a second voltage regulator that dissipates less power than said first voltage regulator (Fig. 3, reference 1; col. 3, lines 6-10; col. 7, line 66 through col. 8, line 2).

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by applicant to modify Jokinen's second voltage regulator to dissipate less power than said first voltage regulator as suggested by Aoyama for the advantages of enabling respective units and circuits to maintain their operations while reducing power consumption (Aoyama: col. 3, lines 20-31)

Regarding claims 56 and 86, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 26.

Regarding claim 27, in the obvious combination, Karaoguz discloses wherein said baseband processor receives a power mode select signal from a medium access controller (Fig. 6; paragraphs [0054] and [0057]).

Regarding claims 57 and 87, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 27.

Regarding claim 28, in the obvious combination, Karaoguz discloses further comprising a first phase locked loop (PLL) that generates a first clock signal for said BBP during the active mode (Fig. 6; note that PLL inherently generate clock signals during active mode) and that is powered down during the low power mode (Fig. 6; paragraphs [0043]).

Regarding claims 58 and 88, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 28.

Regarding claim 29, in the obvious combination, Karaoguz discloses wherein said first PLL receives a timing signal from a crystal oscillator during the active mode (Fig. 6; note that PLL inherently receives timing signals from an oscillator).

Regarding claims 59 and 89, the limitations are rejected for the same reasons and motivations stated above for claim 29.

Regarding claim 30, in the obvious combination, Aoyama discloses further comprising a first oscillator that generates a second clock signal during the low power mode (Figs. 3 and 6, reference 4) wherein said first oscillator dissipates less power than the crystal oscillator (Fig. 3; col. 3, liens 32-46).

Regarding claims 60 and 90, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 30.

GROUP III:

14. Claims 91-92, 101-102, 154-155, 164-165, 217-218, and 224-225 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kohlschmidt (Patent No.: 6,029,061) in view of Amos.

Regarding claim 91, Kohlschmidt discloses a wireless device with active and low power modes, comprising:

an oscillator that generates a first reference frequency (Fig. 1, reference 101) and a second reference frequency that is lower than said first reference frequency (Fig. 1, reference 102);

a radio frequency (RF) transceiver that communicates with said oscillator and that transmits and receives RF signals (Fig. 1, reference 106);

a baseband processor (BBP) that communicates with said oscillator and said RF transceiver and that performs RF mixing (Fig. 1; col. 1, lines 46-51); and

a shutdown module that shuts down said BBP and said RF transceiver in said low power mode (col. 7, lines 36-42) and transitions from said first frequency to said second frequency when transitioning from said active mode to said low power mode (col. 3, lines 22-28), and that operates said BBP and said RF transceiver in said active mode (col. 3, lines 22-28; col. 5, lines 12-21) and transitions from said second frequency to said first frequency when transitioning from said low power mode to said active mode (col. 3, lines 28-32), wherein a control device includes said shutdown module (Fig. 1, reference 103; col. 3, line 66 through col. 4, line 2)

Kohlschmidt fails to specifically disclose a medium access control (MAC) device. Note, however, that Kohlschmidt's Fig. 1, reference 103 can be fairly characterized as a MAC device.

Nevertheless, in the same field of endeavor, Amos discloses wherein a medium access control (MAC) device includes said shutdown module (col. 3, lines 3-8 and 19-24).

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by applicant to modify the control device of Kohlschmidt to be a MAC as suggested by Amos for the advantages of complying with wireless network configuration, such as the one in Kohlschmidt, they are widely available and is required to be responsive to events from a wireless of RF interface (Amos: col. 1, lines 41-43).

Regarding claims 154 and 217, the limitations are rejected for the same reasons and motivations stated above for claim 91.

Regarding claim 92, in the obvious combination, Kohlschmidt discloses wherein said oscillator includes a first oscillator that generates said first reference frequency (Fig. 1, reference numeral 101) and a second oscillator that consumes less power than said first oscillator and that generates said second reference frequency (Fig. 1, reference numeral 102).

Regarding claims 155 and 218, the limitations are rejected for the same reasons and motivations stated above for claim 92.

Regarding claim 101, in the obvious combination, Kohlschmidt discloses wherein said shutdown module selectively calibrates said second reference frequency of said second oscillator using said first reference frequency of said first oscillator before transitioning to said low power mode (col. 5, lines 38-43).

Regarding claims 164 and 224, the limitations are rejected for the same reasons and motivations stated above for claim 101.

Regarding claim 102, in the obvious combination, Kohlschmidt/Amos disclose a system comprising a wireless device with active and low power modes further comprising a remote device for periodically transmitting a beacon, wherein said shutdown module transitions said wireless device from said low power mode prior to receiving a beacon (Amos: col. 1, lines 62-65; col. 5, lines 1-8).

Regarding claims 165 and 225, the limitations are rejected for the same reasons and motivations stated above for claim 102.

15. Claims 94, 157, and 219 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kohlschmidt in combination Amos, and further in view of Chapman.

Regarding claim 94, Kohlschmidt/Amos discloses the wireless device of claim 92 (see above) wherein said first oscillator includes a crystal oscillator (Kohlschmidt: col. 3, lines 41-56), but fail to specifically disclose said second oscillator includes a semiconductor oscillator.

However, in the same field of endeavor, Chapman discloses a wireless device with active and low power modes wherein said first oscillator includes a crystal oscillator (col. 4, lines 33-54) and said second oscillator includes a semiconductor oscillator (col. 4, lines 33-54).

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by applicant to incorporate the second oscillator of Kohlschmidt/Amos to include a semiconductor oscillator as suggested by Chapman for the advantages of having the characteristics of drawing very little power in both sleep and stop modes (Chapman: col. 4, lines 39-43).

Regarding claims 157 and 219, the limitations are rejected for the same reasons and motivations stated above for claim 94.

16. Claims 95-97, 100, 158-160, 163, and 220-221 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kohlschmidt/Amos as applied to claim 91 above, and further in view of Aoyama.

Regarding claim 95, Kohlschmidt/Amos disclose the wireless device of claim 91 (see above), but fail to disclose further comprising a voltage supply that supplies a first voltage level during said active mode and a second voltage level during said low power mode.

However, in the same field of endeavor, Aoyama discloses a voltage supply that supplies a first voltage level during said active mode and a second voltage level during said low power mode (Figs. 3 and 9; from col. 7 line 51 through col. 8, line 2).

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by applicant to incorporate in the wireless device of Kohlschmidt/Amos a voltage supply that supplies a first voltage level during said active mode and a second voltage level during said low power mode as suggested by Aoyama for the advantages of enabling respective units and circuits to maintain their operations while reducing power consumption (Aoyama: col. 3, lines 20-24) and for supplying different voltages for different sections of the circuitry since most electronic devices require it.

Regarding claim 158 and 220, the limitations are rejected for the same reasons and motivations stated above for claim 95.

Regarding claim 96, in the obvious combination, Aoyama discloses wherein said voltage supply includes a first voltage supply that supplies said first voltage level (Figs. 3 and 9;

reference Vdd) and a second voltage supply that supplies said second voltage level (Figs. 3 and 9; reference 1; from col. 7, line 66 through col. 8, line 2).

Regarding claims 159, the limitations are rejected for the same reasons and motivations stated above for claim 96.

Regarding claim 97, in the obvious combination, Aoyama discloses wherein said shutdown module transitions from said first voltage level to said second voltage level when transitioning from said active mode to said low power mode (from col. 7, line 66 through col. 8, line 2) and transitions from said second voltage level to said first voltage level when transitioning from said low power mode to said active mode (col. 7, lines 39-49 and col. 8, lines 28-39).

Regarding claims 160 and 221 the limitations are rejected for the same reasons and motivations stated above for claim 97.

Regarding claim 100, in the obvious combination, Aoyama discloses wherein said first voltage supply includes a first voltage regulator and said second voltage supply includes a second voltage regulator (Figs. 3 and 9).

Regarding claim 163, the limitations are rejected for the same reasons and motivations stated above for claim 100.

17. Claims 98-99, 161-162, and 222-223 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kohlschmidt/Amos as applied to claim 91 above, and further in view of Applicant's admitted prior art.

Regarding claim 98, Kohlschmidt/Amos disclose the wireless device of claim 91 (see above), including a first phase locked loop (PLL) (Kohlschmidt: col. 5, line 65 through col. 6,

line 9), and wherein said shutdown module shuts down said first PLL during said low power mode and operates said first PLL during said active mode (Kohlschmidt: col. 6, lines 7-10); but fails to disclose wherein said RF transceiver includes the first PLL.

However, Applicant's admitted prior art discloses wherein said RF transceiver includes a first phase locked loop (PLL) (Background of the Invention: paragraph [0003]).

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by applicant to include in the RF transceiver of Kohlschmidt/Amos a first phase locked loop as suggested by Applicant's admitted prior art for the advantages of making integral and placing in a single housing.

Regarding claims 161 and 222, the limitations are rejected for the same reasons and motivations stated above for claim 98.

Regarding claim 99, Kohlschmidt/Amos disclose the wireless device of claim 98 (see above), wherein said shutdown module shuts down said second PLL during said low power mode and operates said second PLL during said active mode (Kohlschmidt: col. 6, lines 7-10; col. 7, lines 36-42), but fail to disclose wherein said BBP includes a second PLL.

However, Applicant's admitted prior art discloses wherein said BBP includes a second phase locked loop (PLL) (Background of the Invention: paragraph [0003]; note the plurality of phase locked loops).

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by applicant to include in the BBP of Kohlschmidt/Amos a second phase locked loop as suggested by Applicant's admitted prior art for the advantages of adjusting the frequency of

the input signal, making integral and placing under a single housing; in addition, that PLL are widely available.

Regarding claim 162 and 223, the limitations are rejected for the same reasons and motivations stated above for claim 99.

GROUP IV:

18. Claims 103-104, 106-107, 111-113, 166-167, 169-170, 174-176, 226-228, and 231-232 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kohlschmidt in views of Amos and Aoyama.

Regarding claim 103, Kohlschmidt discloses a wireless device with active and low power modes, comprising:

a radio frequency (RF) transceiver that transmits and receives RF signals (Fig. 1, reference 106);

a baseband processor (BBP) that communicates with said RF transceiver and that performs RF mixing (Fig. 1; col. 1, lines 46-51; note that it inherently performs RF mixing); and

a shutdown module that shuts down said BBP and said RF transceiver in said low power mode (col. 7, lines 36-42), and that operates said BBP and said RF transceiver in said active mode (col. 3, lines 22-28; col. 5, lines 12-21),

wherein a control device includes said shutdown module (Fig. 1, reference 103; col. 3, line 66 through col. 4, line 2).

Kohlschmidt fails to specifically disclose a voltage supply that supplies a first voltage level and a second voltage level that is less that said first voltage level; transitioning from said first voltage level to said second voltage level when transitioning from said active mode to said

low power mode and transitioning from said second voltage level to said first voltage level when transitioning from said low power mode to said active mode and a medium access control (MAC) device. Note, however, that Kohlschmidt's Fig. 1, reference 103 can be fairly characterized as a MAC device.

Nevertheless, in the same field of endeavor, Amos discloses wherein a medium access control (MAC) device includes said shutdown module (col. 3, lines 3-8 and 19-24).

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by applicant to modify the control device of Kohlschmidt to be a MAC as suggested by Amos for the advantages of complying with wireless network configuration, such as the one in Kohlschmidt, they are widely available and is required to be responsive to events from a wireless of RF interface (Amos: col. 1, lines 41-43).

In addition, in the same field of endeavor, Aoyama discloses a voltage supply that supplies a first voltage level and a second voltage level that is less that said first voltage level (Fig. 3, references Vdd and 1); transitioning from said first voltage level to said second voltage level when transitioning from said active mode to said low power mode (col. 7, line 51 through col. 8, line 2) and transitioning from said second voltage level to said first voltage level when transitioning from said low power mode to said active mode (col. 7, lines 37-50).

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by applicant to incorporate in the device of Kohlschmidt and Amos a voltage supply that supplies a first voltage level and a second voltage level that is less that said first voltage level; transitioning from said first voltage level to said second voltage level when transitioning from said active mode to said low power mode and transitioning from said second voltage level

to said first voltage level when transitioning from said low power mode to said active mode as suggested by Aoyama for the advantages of enabling respective units and circuits to maintain their operations while reducing power consumption (Aoyama: col. 3, lines 20-24) and for supplying different voltages for different sections of the circuitry since most electronic devices require it.

Regarding claims 166 and 226, the limitations are rejected for the same reasons and motivations stated above for claim 103.

Regarding claim 104, in the obvious combination, Aoyama discloses wherein said voltage supply includes a first voltage supply that supplies said first voltage level (Figs. 3 and 9, reference numeral Vdd) and a second voltage supply that supplies said second voltage level (Figs. 3 and 9, reference numeral 1).

Regarding claim 167, the limitations are rejected for the same reasons and motivations stated above for claim 104.

Regarding claim 104, in the obvious combination, Amos discloses a wireless device with active and low power modes further comprising a medium access controller (MAC) device that includes said shutdown module (from col. 2, line 61 through col. 3, line 8).

Regarding claim 106, in the obvious combination, Kohlschmidt discloses further comprising a first oscillator that communicates with said BBP and said RF transceiver (Fig. 1, reference 101) that generates a first reference frequency (Fig. 1). In addition, in the obvious combination, Aoyama discloses further comprising a first oscillator that receives said first voltage level and that generates a first reference frequency (Fig. 3).

Regarding claims 169 and 227, the limitations are rejected for the same reasons and motivations stated above for claim 106.

Regarding claim 107, in the obvious combination, Kohlschmidt discloses further comprising a second oscillator (Fig. 1, reference 102) that receives said second voltage level, that consumes less power than said first oscillator and that generates a second reference frequency (Fig. 1, reference 102). In addition, in the obvious combination, Aoyama discloses further comprising a second oscillator that receives said second voltage level and that generates a second reference frequency (Fig. 3).

Regarding claims 170 and 228, the limitations are rejected for the same reasons and motivations stated above for claim 107.

Regarding claim 111, in the obvious combination, Aoyama discloses wherein said first voltage supply includes a first voltage regulator (Figs. 3 and 9, reference Vdd) and said second voltage supply includes a second voltage regulator (Figs. 3 and 9, reference 1).

Regarding claim 174, the limitations are rejected for the same reasons and motivations stated above for claim 111.

Regarding claim 112, in the obvious combination, Kohlschmidt discloses wherein said shutdown module selectively calibrates said second reference frequency of said second oscillator using said first reference frequency of said first oscillator before transitioning to said low power mode (col. 5, lines 38-43).

Regarding claims 175 and 231, the limitations are rejected for the same reasons and motivations stated above for claim 112.

Regarding claim 113, in the obvious combination, Kohlschmidt/Amos/Aoyama discloses a system comprising the wireless device of claim 103 further comprising a remote device for periodically transmitting a beacon, wherein said shutdown module transitions said wireless device from said low power mode prior to receiving a beacon (Amos: col. 1, lines 62-65; col. 5, lines 1-8).

Regarding claims 176 and 232, the limitations are rejected for the same reasons and motivations stated above for claim 113.

19. Claims 108 and 171 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kohlschmidt in combination Amos and Aoyama, and further in view of Chapman.

Regarding claim 94, Kohlschmidt/Amos/Aoyama discloses the wireless device of claim 107 (see above) wherein said first oscillator includes a crystal oscillator (Kohlschmidt: col. 3, lines 41-56), but fail to specifically disclose said second oscillator includes a semiconductor oscillator.

However, in the same field of endeavor, Chapman discloses a wireless device with active and low power modes wherein said first oscillator includes a crystal oscillator (col. 4, lines 33-54) and said second oscillator includes a semiconductor oscillator (col. 4, lines 33-54).

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by applicant to incorporate the second oscillator of Kohlschmidt/Amos/Aoyama to include a semiconductor oscillator as suggested by Chapman for the advantages of having the characteristics of drawing very little power in both sleep and stop modes (Chapman: col. 4, lines 39-43), and are widely available.

Regarding claims 171, the limitations are rejected for the same reasons and motivations stated above for claim 108.

20. Claims 109-110, 172-173, and 229-230 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kohlschmidt/Amos/Aoyama as applied to claim 103 above, and further in view of Applicant's admitted prior art.

Regarding claim 109, Kohlschmidt/Amos/Aoyama disclose the wireless device of claim 103 (see above), including a first phase locked loop (PLL) (Kohlschmidt: col. 5, line 65 through col. 6, line 9), and wherein said shutdown module shuts down said first PLL during said low power mode and operates said first PLL during said active mode (Kohlschmidt: col. 6, lines 7-10); but fails to disclose wherein said RF transceiver includes the first PLL.

However, Applicant's admitted prior art discloses wherein said RF transceiver includes a first phase locked loop (PLL) (Background of the Invention: paragraph [0003]).

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by applicant to include in the RF transceiver of Kohlschmidt/Amos/Aoyama a first phase locked loop as suggested by Applicant's admitted prior art for the advantages of making integral, placing in a single housing, and are widely available.

Regarding claims 172 and 229, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 109.

Regarding claim 110, Kohlschmidt/Amos/Aoyama disclose the wireless device of claim 109 (see above), wherein said shutdown module shuts down said second PLL during said low power mode and operates said second PLL during said active mode (Kohlschmidt: col. 6, lines 7-10; col. 7, lines 36-42), but fail to disclose wherein said BBP includes a second PLL.

However, Applicant's admitted prior art discloses wherein said BBP includes a second phase locked loop (PLL) (Background of the Invention: paragraph [0003]; note the plurality of phase locked loops).

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by applicant to include in the BBP of Kohlschmidt/Amos/Aoyama a second phase locked loop as suggested by Applicant's admitted prior art for the advantages of adjusting the frequency of the input signal, making integral and placing under a single housing; in addition, that PLL are widely available.

Regarding claims 173 and 230, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 110.

GROUP V:

21. Claims 114-115, 120-122, 177-178, 183-185,233-234, and 237-238 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kohlschmidt in views of Amos and Aoyama.

Regarding claim 114, Kohlschmidt discloses a wireless device with active and low power modes, comprising:

a first oscillator that generates a first reference frequency (Fig. 1, reference 101).

a second oscillator that generates a second reference frequency that is lower than said first frequency (Fig. 1, reference 102).

a shutdown module that shuts down said first oscillator in said low power mode (col. 3, lines 22-24; col. 7, lines 36-42), and that operates first oscillator in said active mode (col. 3, lines 22-28; col. 5, lines 12-21), wherein said wireless device at least one of transmits and receives data during the active mode (col. 1, lines 1-26).

wherein a control device includes said shutdown module (Fig. 1, reference 103; col. 3, line 66 through col. 4, line 2).

Kohlschmidt fails to specifically disclose a first voltage supply that supplies a first voltage level to said first oscillator; a second voltage supply that supplies a second voltage level that is less than said first voltage level to said second oscillator; transitioning from said first voltage level to said second voltage level when transitioning from said active mode to said low power mode and transitioning from said second voltage level to said first voltage level when transitioning from said low power mode to said active mode and a medium access control (MAC) device. Note, however, that Kohlschmidt's Fig. 1, reference 103 can be fairly characterized as a MAC device.

Nevertheless, in the same field of endeavor, Amos discloses wherein a medium access control (MAC) device includes said shutdown module (col. 3, lines 3-8 and 19-24).

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by applicant to modify the control device of Kohlschmidt to be a MAC as suggested by Amos for the advantages of complying with wireless network configuration, such as the one in Kohlschmidt, they are widely available and is required to be responsive to events from a wireless of RF interface (Amos: col. 1, lines 41-43).

In addition, in the same field of endeavor, Aoyama discloses a first voltage supply that supplies a first voltage level to said first oscillator (Figs. 3 and 9, references Vdd); a second voltage supply that supplies a second voltage level that is less than said first voltage level to said second oscillator (Figs. 3 and 9, reference 1); transitioning from said first voltage level to said second voltage level when transitioning from said active mode to said low power mode (col. 7,

line 51 through col. 8, line 2) and transitioning from said second voltage level to said first voltage level when transitioning from said low power mode to said active mode (col. 7, lines 37-50).

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by applicant to incorporate in the device of Kohlschmidt and Amos a first voltage supply that supplies a first voltage level to said first oscillator; a second voltage supply that supplies a second voltage level that is less than said first voltage level to said second oscillator; transitioning from said first voltage level to said second voltage level when transitioning from said active mode to said low power mode and transitioning from said second voltage level to said first voltage level when transitioning from said low power mode to said active mode as suggested by Aoyama for the advantages of enabling respective units and circuits to maintain their operations while reducing power consumption (Aoyama: col. 3, lines 20-24) and for supplying different voltages for different sections of the circuitry since most electronic devices require it.

Regarding claims 177 and 233, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 114.

Regarding claim 115, in the obvious combination, Kohlschmidt discloses further comprising:

a radio frequency (RF) transceiver that communicates with said first oscillator and that transmits and receives RF signals (Fig. 1, reference 106); and

a baseband processor (BBP) that communicates with said first oscillator and said RF transceiver and that performs RF mixing (Fig. 1; col. 1, lines 46-51; note that it inherently

performs RF mixing), wherein said shutdown module that shuts down said RF transceiver and said BBP in said low power mode (col. 7, lines 36-42), and that operates said BBP and said RF transceiver during said active mode (col. 3, lines 22-28; col. 5, lines 12-21).

Regarding claims 178 and 234, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 115.

Regarding claim 120, in the obvious combination, Aoyama discloses wherein said first voltage supply includes a first voltage regulator and said voltage supply includes a second voltage regulator (Figs. 3 and 9).

Regarding claim 183, the limitations are rejected as stated above for claim 120.

Regarding claim 121, in the obvious combination, Kohlschmidt discloses wherein said shutdown module selectively calibrates said second reference frequency of said second oscillator using said first reference frequency of said first oscillator before transitioning to said low power mode (col. 5, lines 38-43).

Regarding claims 184 and 237, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 121.

Regarding claim 122, in the obvious combination, Kohlschmidt/Amos/Aoyama discloses a system comprising the wireless device of claim 114 further comprising a remote device for periodically transmitting a beacon, wherein said shutdown module transitions said wireless device from said low power mode prior to receiving a beacon (Amos: col. 1, lines 62-65; col. 5, lines 1-8).

Regarding claims 185 and 238, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 122.

22. Claims 117 and 180 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kohlschmidt in combination Amos and Aoyama, and further in view of Chapman.

Regarding claim 117, Kohlschmidt/Amos/Aoyama discloses the wireless device of claim 114 (see above) wherein said first oscillator includes a crystal oscillator (Kohlschmidt: col. 3, lines 41-56), but fail to specifically disclose said second oscillator includes a semiconductor oscillator.

However, in the same field of endeavor, Chapman discloses a wireless device with active and low power modes wherein said first oscillator includes a crystal oscillator (col. 4, lines 33-54) and said second oscillator includes a semiconductor oscillator (col. 4, lines 33-54).

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by applicant to incorporate the second oscillator of Kohlschmidt/Amos/Aoyama to include a semiconductor oscillator as suggested by Chapman for the advantages of having the characteristics of drawing very little power in both sleep and stop modes (Chapman: col. 4, lines 39-43), and are widely available.

Regarding claim 180, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 117.

23. Claims 118-119, 181-182, and 235-236 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kohlschmidt/Amos/Aoyama as applied to claim 115 above, and further in view of Applicant's admitted prior art.

Regarding claim 118, Kohlschmidt/Amos/Aoyama disclose the wireless device of claim 115 (see above), including a first phase locked loop (PLL) (Kohlschmidt: col. 5, line 65 through col. 6, line 9), and wherein said shutdown module shuts down said first PLL during said low

power mode and operates said first PLL during said active mode (Kohlschmidt: col. 6, lines 7-10); but fails to disclose wherein said RF transceiver includes the first PLL.

However, Applicant's admitted prior art discloses wherein said RF transceiver includes a first phase locked loop (PLL) (Background of the Invention: paragraph [0003]).

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by applicant to include in the RF transceiver of Kohlschmidt/Amos/Aoyama a first phase locked loop as suggested by Applicant's admitted prior art for the advantages of making integral, placing in a single housing, and are widely available.

Regarding claims 181 and 235, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 118.

Regarding claim 119, Kohlschmidt/Amos/Aoyama disclose the wireless device of claim 118 (see above), wherein said shutdown module shuts down said second PLL during said low power mode and operates said second PLL during said active mode (Kohlschmidt: col. 6, lines 7-10; col. 7, lines 36-42), but fail to disclose wherein said BBP includes a second PLL.

However, Applicant's admitted prior art discloses wherein said BBP includes a second phase locked loop (PLL) (Background of the Invention: paragraph [0003]; note the plurality of phase locked loops).

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by applicant to include in the BBP of Kohlschmidt/Amos/Aoyama a second phase locked loop as suggested by Applicant's admitted prior art for the advantages of adjusting the frequency of the input signal, making integral and placing under a single housing; in addition, that PLL are widely available.

Regarding claims 182 and 236, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 119.

GROUP VI:

24. Claims 123, 129-130, 132, 186, 192-193, 195, 239, and 242-244 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kohlschmidt.

Regarding claim 123, Kohlschmidt discloses a wireless device with active and low power modes, comprising:

a first oscillator that generates a first reference frequency (Fig. 1, reference 101);

a second oscillator that generates a second reference frequency that is lower than said first reference frequency (Fig. 1, reference 102);

a first circuit that communicates with said first oscillator (Fig. 1, references 106 and portions of 103 either alone or in combination; col. 5, line 65 through col. 6, line 9; col. 7, lines 30-34);

a second circuit that communicates with said second oscillator (Figs. 1 and 3-4; col. 7, lines 39-42); and

a shutdown module that shuts down said first wireless circuit and said first oscillator (col. 7, lines 30-34) and operates said second oscillator and said second wireless circuit during said low power mode (col. 7, lines 39-42), and that operates said first oscillator and said first wireless circuit during said active mode (col. 3, lines 28-32), wherein the wireless device at least one of transmits and receives data during the active mode (col. 1, lines 11-26; note that it is inherent that the wireless device at least one of transmits and receives data during the active mode).

Kohlschmidt fails to specifically disclose the first and second circuits are wireless.

However, the Examiner takes Official Notice of the fact that it was notoriously well known in the art at the time of invention by applicant to modify circuits to be wireless for the advantages or facilitating maintenance and replacement of parts; thereby, making it more convenient and easier to manufacture.

In addition, it would have been an obvious matter of design choice to modify the circuits to be wireless since the applicant has not disclosed that the circuits being wireless solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with the circuits of Kohlschmidt.

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by applicant to modify the circuits of Kohlschmidt to be wireless for the advantages or facilitating maintenance and replacement of parts, is more convenient, easier to manufacture and is the best engineering design choice.

Regarding claims 186 and 239, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 123.

Regarding claim 129, in the obvious combination, Kohlschmidt discloses wherein said first wireless circuit includes a first phase locked loop (PLL) (col. 5, line 65 through col. 6, line 9), and wherein said shutdown module shuts down said first PLL during said low power mode (col. 5, line 65 through col. 6, line 9) and operates said first PLL during said active mode (col. 3, lines 28-32; col. 5, line 65 through col. 6, line 9).

Regarding claims 192 and 242, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 129.

Regarding claim 130, in the obvious combination, Kohlschmidt discloses wherein first wireless circuit includes at least one of a baseband processor (BBP) and/or a radio frequency (RF) transmitter (Fig. 1).

Regarding claims 193 and 243, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 130.

Regarding claim 132, in the obvious combination, Kohlschmidt discloses wherein said shutdown module selectively calibrates said second reference frequency of said second oscillator using said first reference frequency of said first oscillator before transitioning to said low power mode (col. 5, lines 38-43).

Regarding claims 195 and 244, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 132.

25. Claims 124, 133, 187, 196, and 245 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kohlschmidt in view of Amos.

Kohlschmidt discloses further comprising a control device that includes said shutdown module (Fig. 1, reference 103; col. 3, line 66 through col. 4, line 2), but fails to specifically disclose a medium access control (MAC) device. Note, however, that Kohlschmidt's Fig. 1, reference 103 can be fairly characterized as a MAC device.

Nevertheless, in the same field of endeavor, Amos discloses wherein a medium access control (MAC) device includes said shutdown module (col. 3, lines 3-8 and 19-24).

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by applicant to modify the control device of Kohlschmidt to be a MAC as suggested by Amos for the advantages of complying with wireless network configuration, such as the one in

Kohlschmidt, they are widely available and are required to be responsive to events from a wireless of RF interface (Amos: col. 1, lines 41-43).

Regarding claim 187, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 124.

Regarding claim 133, Kohlschmidt discloses a system comprising the wireless device of claim 123 (see above), but fails to disclose further comprising a remote device that periodically transmits a beacon, wherein said shutdown module transitions said wireless device from said low power mode to said active mode prior to receiving said beacon.

However, in the same field of endeavor, Amos discloses a system comprising a wireless device with active and low power modes further comprising a remote device for periodically transmitting a beacon, wherein said shutdown module transitions said wireless device from said low power mode prior to receiving a beacon (col. 1, lines 62-65; col. 5, lines 1-8).

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by applicant to further comprise in the system of Kohlschmidt in combination with Hunter remote device for periodically transmitting a beacon, wherein said shutdown module transitions said wireless device from said low power mode prior to receiving a beacon as suggested by Amos because the system would determine if there is any activity that needs to be handled (Amos: col. 5, lines 8-9).

Regarding claims 196 and 245, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 133.

26. Claims 125 and 188 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kohlschmidt in view of Chapman.

Regarding claim 125, Kohlschmidt discloses the wireless device of claim 123 (see above) wherein said first oscillator includes a crystal oscillator (Kohlschmidt: col. 3, lines 41-56), but fail to specifically disclose said second oscillator includes a semiconductor oscillator.

However, in the same field of endeavor, Chapman discloses a wireless device with active and low power modes wherein said first oscillator includes a crystal oscillator (col. 4, lines 33-54) and said second oscillator includes a semiconductor oscillator (col. 4, lines 33-54).

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by applicant to incorporate the second oscillator of Kohlschmidt to include a semiconductor oscillator as suggested by Chapman for the advantages of having the characteristics of drawing very little power in both sleep and stop modes (Chapman: col. 4, lines 39-43), and are widely available.

Regarding claim 188, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 125.

27. Claims 126-128, 131, 189-191, 194, and 240-241 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kohlschmidt in view of Aoyama.

Regarding claim 126, Kohlschmidt discloses the wireless device of claim 123 (see above), but fails to disclose further comprising a voltage supply that supplies a first voltage level to said first oscillator and a second voltage level that is less than said first voltage level to said second oscillator.

However, in the same field of endeavor, Aoyama discloses a voltage supply that supplies a first voltage level to said first oscillator (Figs. 3 and 9, reference Vdd) and a second voltage level that is less than said first voltage level to said second oscillator (Figs. 3 and 9, reference 1).

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by applicant to incorporate in the device of Kohlschmidt a voltage supply that supplies a first voltage level to said first oscillator and a second voltage level that is less than said first voltage level to said second oscillator as suggested by Aoyama for the advantages of enabling respective units and circuits to maintain their operations while reducing power consumption (Aoyama: col. 3, lines 20-24) and for supplying different voltages for different sections of the circuitry since most electronic devices require it.

Regarding claims 189 and 240, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 126.

Regarding claims 127, in the obvious combination, Aoyama discloses wherein said voltage supply includes a first voltage supply that supplies said first voltage level to said first wireless circuit (Figs. 3 and 9, reference Vdd), and a second voltage supply that supplies said second voltage level o said second wireless circuit (Figs. 3 and 9, reference Vdd; note the modification of the circuits in claim 123).

Regarding claims 190, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 127.

Regarding claim 128, in the obvious combination, Aoyama discloses wherein said shutdown module transitions from said first voltage level to said second voltage level when transitioning from said active mode to said low power mode (from col. 7, line 66 through col. 8, line 2) and transitions from said second voltage level to said first voltage level when transitioning form said low power mode to said active mode (col. 7, lines 39-49 and col. 8, lines 28-39). The reasons and motivations being the same as those of claim 126.

Regarding claims 191 and 241, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 128.

Regarding claim 131, in the obvious combination, Aoyama discloses wherein said first voltage supply includes a first voltage regulator (Figs. 3 and 9, reference Vdd) and said second voltage supply includes a second voltage regulator (Figs. 3 and 9, reference 1).

Regarding claims 194, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 131.

GROUP VII:

28. Claims 134-135, 137, 139-143, 197-198, 200, 202-206, and 246-251 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kohlschmidt in view of Aoyama.

Regarding claim 134, Kohlschmidt discloses a wireless device with active and low power modes, comprising:

a first circuit (Fig. 1, references 106 and portions of 103 either alone or in combination; col. 5, line 65 through col. 6, line 9; col. 7, lines 30-34);

a second circuit (Figs. 1 and 3-4; col. 7, lines 39-42); and

a shutdown module that shuts down said first circuit (col. 7, lines 30-34 and 39-40) and operates said second wireless circuit in said low power mode (col. 7, lines 39-42) and that operates said first wireless circuit in said active mode (col. 3, lines 28-32), wherein the wireless device at least one of transmits and receives data during the active mode (col. 1, lines 11-26; note that it is inherent that the wireless device at least one of transmits and receives data during the active mode).

Kohlschmidt fails to specifically disclose the first and second circuits are wireless; a voltage supply that supplies a first voltage level and a second voltage level that is less than said first voltage level; transitioning from said first voltage level to said second voltage level when transitioning from said active mode to said low power mode, transitioning from said second voltage level to said first voltage level when transitioning from said low power mode to said active mode.

However, the Examiner takes Official Notice of the fact that it was notoriously well known in the art at the time of invention by applicant to modify circuits to be wireless for the advantages or facilitating maintenance and replacement of parts; thereby, making it more convenient and easier to manufacture.

In addition, it would have been an obvious matter of design choice to modify the circuits to be wireless since the applicant has not disclosed that the circuits being wireless solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with the circuits of Kohlschmidt.

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by applicant to modify the circuits of Kohlschmidt to be wireless for the advantages or facilitating maintenance and replacement of parts, is more convenient, easier to manufacture and is the best engineering design choice.

In addition, in the same field of endeavor, Aoyama discloses a voltage supply that supplies a first voltage level and a second voltage level that is less than said first voltage level (Figs. 3 and 9, reference Vdd and 1); transitioning from said first voltage level to said second voltage level when transitioning from said active mode to said low power mode (from col. 7, line

66 through col. 8, line 2), transitioning from said second voltage level to said first voltage level when transitioning from said low power mode to said active mode (col. 7, lines 39-49 and col. 8, lines 28-39).

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by applicant to incorporate in the device of Kohlschmidt a voltage supply that supplies a first voltage level and a second voltage level that is less than said first voltage level; and transitions from said first voltage level to said second voltage level when transitioning from said active mode to said low power mode, transitions from said second voltage level to said first voltage level when transitioning from said low power mode to said active mode as suggested by Aoyama for the advantages of enabling respective units and circuits to maintain their operations while reducing power consumption (Aoyama: col. 3, lines 20-24) and for supplying different voltages for different sections of the circuitry since most electronic devices require it.

Regarding claims 197 and 246, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 134.

Regarding claim 135, in the obvious combination, Aoyama discloses wherein said first voltage supply includes a first voltage supply that supplies said first voltage level and a second voltage supply that supplies said second voltage level (Figs. 3 and 9, reference numeral Vdd and 1, respectively).

Regarding claim 198, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 135.

Regarding claim 137, in the obvious combination, Kohlschmidt discloses further comprising: a first oscillator that communicates with said first wireless circuit and that generates

a first reference frequency (Fig. 1, reference 101) and a second oscillator that consumes less power than said first oscillator and that generates a second reference frequency (Fig. 1, reference 102). In addition, in the obvious combination, Aoyama discloses further comprising: a first oscillator that communicates with said first wireless circuit (Figs. 3 and 9, reference numeral 3), that receives said first voltage level and that generates a first reference frequency (Figs. 3 and 9, reference numeral 3); and a second oscillator that receives said second voltage level, that communicates with said second wireless circuit, that consumes less power than said first oscillator and that generates a second reference frequency (Figs. 3 and 9, reference numeral 4; col. 5, lines 9-11) (note the modification of the wireless circuit in claim 134).

Regarding claim 200 and 247, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 137.

Regarding claim 139, in the obvious combination, Kohlschmidt discloses wherein said shutdown module shuts down said first oscillator (col. 7, lines 30-34) and operates said second oscillator during said low power mode (col. 7, lines 39-42) and operates said first oscillator during said active mode (col. 3, lines 28-32).

Regarding claims 202 and 248, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 139.

Regarding claim 140, in the obvious combination, Kohlschmidt discloses wherein said first wireless circuit includes a first phase locked loop (PLL) (col. 5, line 65 through col. 6, line 9), and wherein said shutdown module shuts down said first PLL during said low power mode (col. 5, line 65 through col. 6, line 9) and operates said first PLL during said active mode (col. 3, lines 28-32; col. 5, line 65 through col. 6, line 9).

Regarding claims 203 and 249, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 140.

Regarding claim 141, in the obvious combination, Kohlschmidt discloses wherein first wireless circuit includes at least one of a baseband processor (BBP) and/or a radio frequency (RF) transmitter (Fig. 1).

Regarding claims 204 and 250, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 141.

Regarding claim 142, in the obvious combination, Aoyama discloses wherein said first voltage supply includes a first voltage regulator (Figs. 3 and 9, reference Vdd) and said second voltage supply includes a second voltage regulator (Figs. 3 and 9, reference numeral 1).

Regarding claim 205, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 142.

Regarding claim 143, in the obvious combination, Kohlschmidt discloses wherein said shutdown module selectively calibrates said second reference frequency of said second oscillator using said first reference frequency of said first oscillator before transitioning to said low power mode (col. 5, lines 38-43).

Regarding claims 206 and 251, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 143.

29. Claims 136, 144, 199, 207, and 252 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kohlschmidt in combination with Aoyama, and further in view of Amos.

Kohlschmidt/Aoyama discloses the wireless device of claim 134 (see above) further comprising a control device that includes said shutdown module (Kohlschmidt: Fig. 1, reference

103; col. 3, line 66 through col. 4, line 2), but fails to specifically disclose a medium access control (MAC) device. Note, however, that Kohlschmidt's Fig. 1, reference 103 can be fairly characterized as a MAC device.

Nevertheless, in the same field of endeavor, Amos discloses wherein a medium access control (MAC) device includes said shutdown module (col. 3, lines 3-8 and 19-24).

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by applicant to modify the control device of Kohlschmidt/Aoyama to be a MAC as suggested by Amos for the advantages of complying with wireless network configuration, such as the one in Kohlschmidt, they are widely available and are required to be responsive to events from a wireless of RF interface (Amos: col. 1, lines 41-43).

Regarding claim 199, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 136.

Regarding claim 144, Kohlschmidt discloses a system comprising the wireless device of claim 123 (see above), but fails to disclose further comprising a remote device that periodically transmits a beacon, wherein said shutdown module transitions said wireless device from said low power mode to said active mode prior to receiving said beacon.

However, in the same field of endeavor, Amos discloses a system comprising a wireless device with active and low power modes further comprising a remote device for periodically transmitting a beacon, wherein said shutdown module transitions said wireless device from said low power mode prior to receiving a beacon (col. 1, lines 62-65; col. 5, lines 1-8).

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by applicant to further comprise in the system of Kohlschmidt in combination with

Hunter remote device for periodically transmitting a beacon, wherein said shutdown module transitions said wireless device from said low power mode prior to receiving a beacon as suggested by Amos because the system would determine if there is any activity that needs to be handled (Amos: col. 5, lines 8-9).

Regarding claims 207 and 252, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 144.

30. Claims 138 and 201 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kohlschmidt in combination with Aoyama in view of Chapman.

Regarding claim 138, Kohlschmidt/Aoyama discloses the wireless device of claim 134 (see above) wherein said first oscillator includes a crystal oscillator (Kohlschmidt: col. 3, lines 41-56), but fail to specifically disclose said second oscillator includes a semiconductor oscillator.

However, in the same field of endeavor, Chapman discloses a wireless device with active and low power modes wherein said first oscillator includes a crystal oscillator (col. 4, lines 33-54) and said second oscillator includes a semiconductor oscillator (col. 4, lines 33-54).

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by applicant to incorporate the second oscillator of Kohlschmidt/Aoyama to include a semiconductor oscillator as suggested by Chapman for the advantages of having the characteristics of drawing very little power in both sleep and stop modes (Chapman: col. 4, lines 39-43), and are widely available.

Regarding claim 201, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 138.

GROUP VIII:

31. Claims 145-146, 151-152, 208-209, 214-215, 253-24, and 257 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kohlschmidt in view of Aoyama.

Regarding claim 145, Kohlschmidt discloses a wireless device with active and low power modes, comprising:

a first oscillator that generates a first reference frequency (Fig. 1, reference 101);

a second oscillator that consumes less power than said first oscillator and that generates a second reference frequency (Fig. 1, reference 102);

a first circuit that communicates with said first oscillator (Fig. 1, references 104, 105, 106, and/or portions of 103, either alone or in combination; col. 5, line 65 through col. 6, line 9; col. 7, lines 30-34);

a second circuit that communicates with said second oscillator (Figs. 1 and 3-4; col. 7, lines 39-42); and

a shutdown module that shuts down said first circuit and said first oscillator in said low power mode (col. 7, lines 30-34 and 39-40) operates said second wireless circuit and said second oscillator in said low power mode (col. 7, lines 39-42) and that operates said first wireless circuit in said active mode (col. 3, lines 28-32), and that operates said first wireless circuit and said first oscillator in said active power mode, wherein the wireless device at least one of transmits and receives data during the active mode (col. 1, lines 11-26; note that it is inherent that the wireless device at least one of transmits and receives data during the active mode).

Kohlschmidt fails to specifically disclose the first and second circuits are wireless; a first voltage supply that supplies a first voltage level to said first oscillator and a second voltage

supply that supplies a second voltage level that is less than said first voltage level to said second oscillator; transitioning from said first voltage level to said second voltage level when transitioning from said active mode to said low power mode, and transitioning from said second voltage level to said first voltage level when transitioning from said low power mode to said active mode.

However, the Examiner takes Official Notice of the fact that it was notoriously well known in the art at the time of invention by applicant to modify circuits to be wireless for the advantages or facilitating maintenance and replacement of parts; thereby, making it more convenient and easier to manufacture.

In addition, it would have been an obvious matter of design choice to modify the circuits to be wireless since the applicant has not disclosed that the circuits being wireless solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with the circuits of Kohlschmidt.

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by applicant to modify the circuits of Kohlschmidt to be wireless for the advantages or facilitating maintenance and replacement of parts, is more convenient, easier to manufacture and is the best engineering design choice.

In addition, in the same field of endeavor, Aoyama discloses a first voltage supply that supplies a first voltage level to said first oscillator (Figs. 3 and 9, reference Vdd) and a second voltage supply that supplies a second voltage level that is less than said first voltage level to said second oscillator (Figs. 3 and 9, reference 1); transitioning from said first voltage level to said second voltage level when transitioning from said active mode to said low power mode (from

col. 7, line 66 through col. 8, line 2), and transitioning from said second voltage level to said first voltage level when transitioning from said low power mode to said active mode (col. 7, lines 39-49 and col. 8, lines 28-39).

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by applicant to incorporate in the device of Kohlschmidt a first voltage supply that supplies a first voltage level to said first oscillator and a second voltage supply that supplies a second voltage level that is less than said first voltage level to said second oscillator; transitioning from said first voltage level to said second voltage level when transitioning from said active mode to said low power mode, and transitioning from said second voltage level to said first voltage level when transitioning from said low power mode to said active mode as suggested by Aoyama for the advantages of enabling respective units and circuits to maintain their operations while reducing power consumption (Aoyama: col. 3, lines 20-24) and for supplying different voltages for different sections of the circuitry since most electronic devices require it.

Regarding claims 208 and 253, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 145.

Regarding claim 146, in the obvious combination, Kohlschmidt discloses wherein said first wireless circuit further comprises:

a radio frequency (RF) transceiver that communicates with said first oscillator and said first voltage supply (Fig. 1, reference 106; note that in the obvious combination the RF transceiver would communicate with the fist voltage supply); and

a baseband processor (BBP) that communicates with said first oscillator and said first voltage supply and that performs RF mixing (Fig. 1, references 104 and/or 105, either alone or in combination; col. 1, lines 46-51; note that in the obvious combination the BBP would communicate with the fist voltage supply and that it inherently performs RF mixing), wherein said shutdown module shuts down said RF transceiver and said BBP during said low power mode (col. 7, lines 39-42).

Regarding claims 209 and 254, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 146.

Regarding claim 151, in the obvious combination, Aoyama discloses wherein said first voltage supply includes a first voltage regulator (Figs. 3 and 9, reference Vdd) and said second voltage supply includes a second voltage regulator (Figs. 3 and 9, reference 1).

Regarding claim 214, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 151.

Regarding claim 152, in the obvious combination, Kohlschmidt discloses wherein said shutdown module selectively calibrates said second reference frequency of said second oscillator using said first reference frequency of said first oscillator before transitioning to said low power mode (col. 5, lines 38-43).

Regarding claims 215 and 257, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 152.

32. Claims 147, 153, 210 216, and 258 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kohlschmidt in combination with Aoyama, and further in view of Amos.

Regarding claim 147, Kohlschmidt/Aoyama discloses the wireless device of claim 145 (see above) further comprising a control device that includes said shutdown module (Kohlschmidt: Fig. 1, reference 103; col. 3, line 66 through col. 4, line 2), but fails to specifically disclose a medium access control (MAC) device. Note, however, that Kohlschmidt's Fig. 1, reference 103 can be fairly characterized as a MAC device.

Nevertheless, in the same field of endeavor, Amos discloses wherein a medium access control (MAC) device includes said shutdown module (col. 3, lines 3-8 and 19-24).

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by applicant to modify the control device of Kohlschmidt/Aoyama to be a MAC as suggested by Amos for the advantages of complying with wireless network configuration, such as the one in Kohlschmidt, they are widely available and are required to be responsive to events from a wireless of RF interface (Amos: col. 1, lines 41-43).

Regarding claim 210, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 147.

Regarding claim 153, Kohlschmidt/Aoyama discloses a system comprising the wireless device of claim 145 (see above), but fails to disclose further comprising a remote device that periodically transmits a beacon, wherein said shutdown module transitions said wireless device from said low power mode to said active mode prior to receiving said beacon.

However, in the same field of endeavor, Amos discloses a system comprising a wireless device with active and low power modes further comprising a remote device for periodically transmitting a beacon, wherein said shutdown module transitions said wireless device from said low power mode prior to receiving a beacon (col. 1, lines 62-65; col. 5, lines 1-8).

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by applicant to further comprise in the system of Kohlschmidt/Aoyama in combination with Hunter remote device for periodically transmitting a beacon, wherein said shutdown module transitions said wireless device from said low power mode prior to receiving a beacon as suggested by Amos because the system would determine if there is any activity that needs to be handled (Amos: col. 5, lines 8-9).

Regarding claims 216 and 258, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 153.

33. Claims 148 and 211 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kohlschmidt in combination with Aoyama in view of Chapman.

Regarding claim 148, Kohlschmidt/Aoyama discloses the wireless device of claim 145 (see above) wherein said first oscillator includes a crystal oscillator (Kohlschmidt: col. 3, lines 41-56), but fail to specifically disclose said second oscillator includes a semiconductor oscillator.

However, in the same field of endeavor, Chapman discloses a wireless device with active and low power modes wherein said first oscillator includes a crystal oscillator (col. 4, lines 33-54) and said second oscillator includes a semiconductor oscillator (col. 4, lines 33-54).

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by applicant to incorporate the second oscillator of Kohlschmidt/Aoyama to include a semiconductor oscillator as suggested by Chapman for the advantages of having the characteristics of drawing very little power in both sleep and stop modes (Chapman: col. 4, lines 39-43), and are widely available.

Regarding claim 211, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 148.

34. Claims 149-150, 212-213, and 255-256 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kohlschmidt in combination with Aoyama, and further in view of Applicant's admitted prior art.

Regarding claim 149, Kohlschmidt/Aoyama disclose the wireless device of claim 146 (see above), including a first phase locked loop (PLL) (Kohlschmidt: col. 5, line 65 through col. 6, line 9), and wherein said shutdown module shuts down said first PLL during said low power mode and operates said first PLL during said active mode (Kohlschmidt: col. 6, lines 7-10); but fails to disclose wherein said RF transceiver includes the first PLL.

However, Applicant's admitted prior art discloses wherein said RF transceiver includes a first phase locked loop (PLL) (Background of the Invention: paragraph [0003]).

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by applicant to include in the RF transceiver of Kohlschmidt/Amos/Aoyama a first phase locked loop as suggested by Applicant's admitted prior art for the advantages of making integral, placing in a single housing, and are widely available.

Regarding claims 212 and 255, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 149.

Regarding claim 150, Kohlschmidt/Aoyama disclose the wireless device of claim 149 (see above), wherein said shutdown module shuts down said second PLL during said low power mode and operates said second PLL during said active mode (Kohlschmidt: col. 6, lines 7-10; col. 7, lines 36-42), but fail to disclose wherein said BBP includes a second PLL.

However, Applicant's admitted prior art discloses wherein said BBP includes a second phase locked loop (PLL) (Background of the Invention: paragraph [0003]; note the plurality of phase locked loops).

Therefore, it would have been obvious to one of ordinary skill in this art at the time of invention by applicant to include in the BBP of Kohlschmidt/Aoyama a second phase locked loop as suggested by Applicant's admitted prior art for the advantages of adjusting the frequency of the input signal, making integral and placing under a single housing; in addition, that PLL are widely available.

Regarding claims 213 and 256, the limitations are rejected with the same grounds and for the same reasons and motivations stated above for claim 150.

Conclusion

35. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marivelisse Santiago-Cordero whose telephone number is (571) 272-7839. The examiner can normally be reached on Monday through Friday from 7:30am to 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lester Kincaid can be reached on (571) 272-7922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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